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Description:	The Burbank IRP file was too large, so it had to be separated into multiple parts. This is "Part 2."
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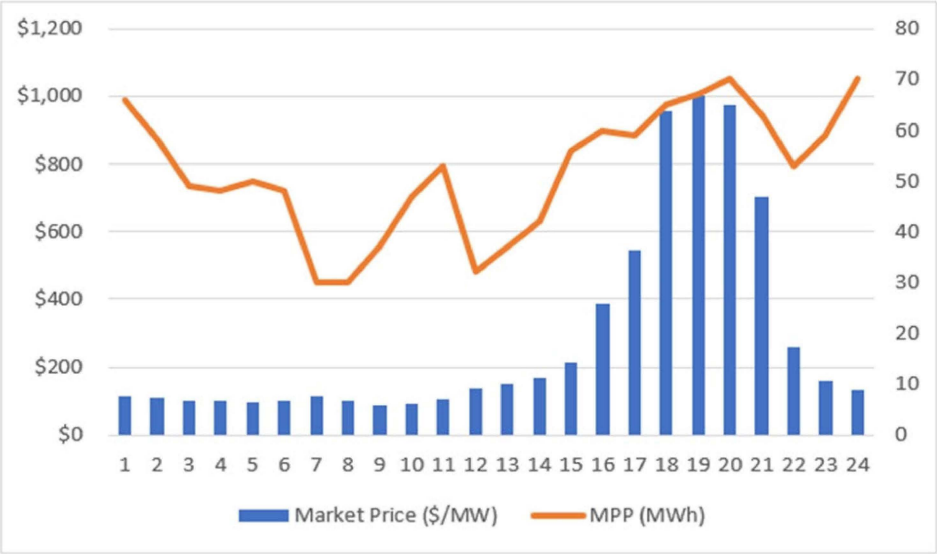


Figure 2-2 Magnolia Production During Heat Dome Event

(Magnolia, *Photo Source: BWP*)

Valley Pumping Plant

In 2002, BWP installed a micro-hydro system to take advantage of a required pressure reduction where Burbank's water facilities interface with the Metropolitan Water District of Southern California (MWD) at the Valley Pumping Plant. Peak output of the facility is approximately 550kW and is used when BWP purchases water from MWD. Due to the small capacity of the Valley Pumping Plant, it was not included in the modeling for the planning scenarios within this IRP.

2.5.4 Power Generated Outside of Burbank

Nearly all of the power imported into Burbank is generated outside of California. BWP enters into long-term contracts for this power or jointly owns them with other municipal partners. This enables the economies of scale needed to procure power at favorable prices, fund large projects, and obtain the most favorable financing rates.

BWP often participates with other municipally owned electric utilities in Southern California through a Joint Powers Authority called the Southern California Public Power Authority (SCPPA) to develop and participate in new generation and transmission projects. SCPPA has been used by BWP to finance participation in the Southern Transmission System (STS), the Palo Verde Nuclear Generating Station, Magnolia, and Hoover Dam. A similar agency based in Utah called the Intermountain Power Agency (IPA), is the Operating Agent for IPP.

Many of the power resources located outside of Burbank are provided via power supply agreements whose terms expire within the planning period of this IRP.

Table 2-6 Net Capacity of Resources

Plant Name	Technology	Nameplate Capacity [MW]	BWP Net Capacity [MW]	Expiration or Retirement Date	BWP Role
Copper Mountain Solar 3	Solar PV	250	40	05/13/2033	PPA Offtaker
Desert Harvest Solar 2	Solar PV	70	22	01/01/2046	PPA Offtaker
Hoover Dam	Hydro	2,079	20.125	12/31/2054	PPA Offtaker
Tieton Dam	Hydro	14	6.8	12/31/2054	Operator
Milford Wind I	Wind	204	10	11/15/2028	PPA Offtaker
Pebble Springs Wind	Wind	99	10	02/01/2026	PPA Offtaker
Intermountain Power Project	Coal	1,800	74	07/01/2025	PPA Offtaker
Don A. Campbell	Geothermal	25	2.49	12/05/2032	PPA Offtaker
Ameresco Chiquita	Landfill Gas CT	10	1.7	11/23/2029	PPA Offtaker
Palo Verde	Nuclear	4,010	9.5	10/31/2030	PPA Offtaker

Copper Mountain Solar 3 (Intermittent)

In late 2012, BWP entered into a 20-year contract for solar power from the Copper Mountain photovoltaic site near Boulder City, Nevada. Burbank has rights to 16% of the output, or about 40 MW nominally. Copper Mountain generation fluctuates dramatically throughout the day and its intermittent nature often leads to BWP buying energy from the market.

Figure 2-3 below shows the generation of Copper Mountain on September 8, 2022 during the heat dome event. This figure shows the intermittent nature of Copper Mountain and the lack of production when market prices were highest.

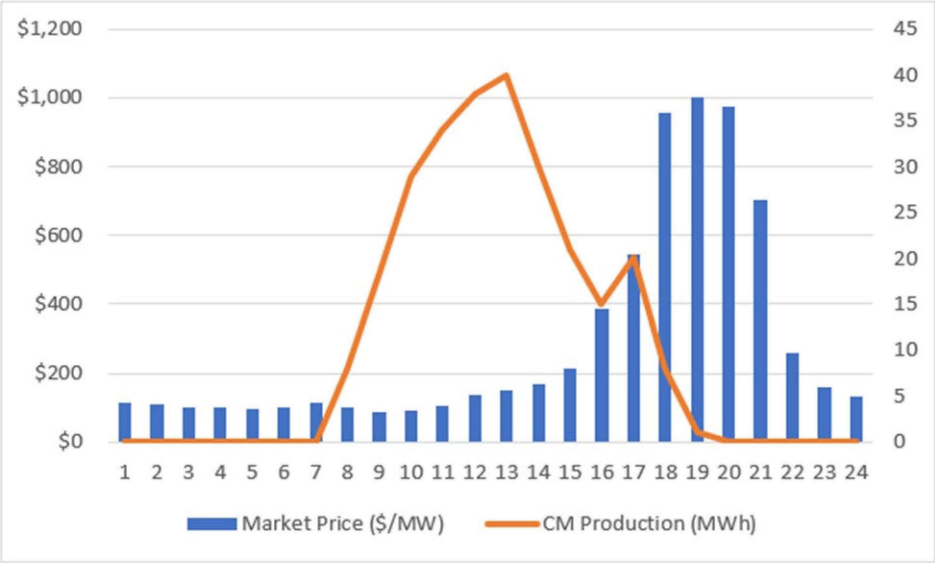


Figure 2-3 Copper Mountain Solar 3 Production During Heat Dome Event

(Copper Mountain Solar 3, *Photo Source: BWP*)

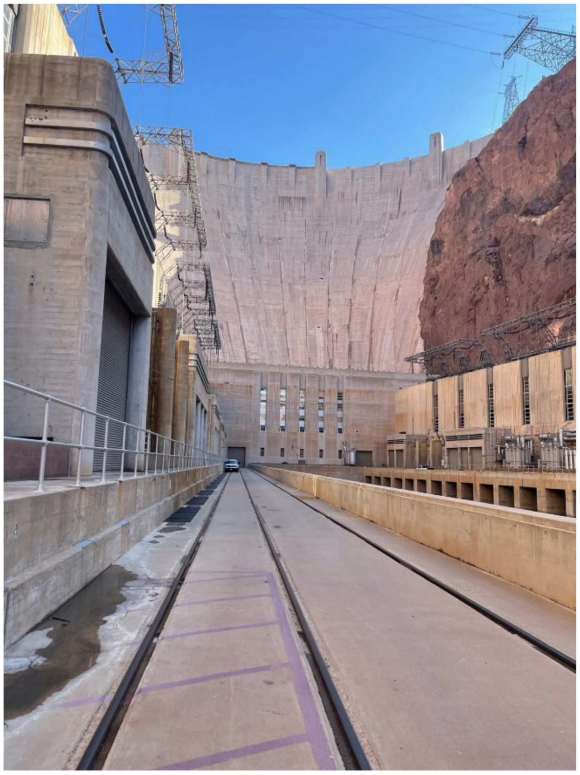
Desert Harvest Solar 2 (Intermittent)

BWP started a 25-year contract with the Desert Harvest Solar 2 site in 2020. Located in Riverside County, California, this facility provides Burbank with approximately 43,000 MWh of energy per year.

(Desert Harvest Solar 2, *Photo Source: BWP*)

Hoover Dam (Baseload)

Hoover Dam, located on the Colorado river along the Nevada-Arizona border provides 20 MW of zero-carbon energy to Burbank.



(Hoover Dam, *Photo Source: BWP*)

Tieton Dam (Baseload)

In 2009, BWP began receiving 50% of the output of the Tieton Hydropower Facility, located in south-central Washington State. Then, later in 2009, the Cities of Burbank and Glendale purchased the facility via SCPPA.

(Tieton Dam, *Photo Source: BWP*)

Milford Wind I (Intermittent)

In 2009, BWP began receiving 10 MW of wind power from Milford Wind I under a long-term contract. The wind farm is in Utah, south of the Intermountain Power Project.

(Milford Wind, *Photo Source: BWP*)

Pebble Springs Wind (Intermittent)

In 2009, BWP began receiving 10 MW of wind power from the Pebble Springs Wind Project under a long-term contract. The wind farm is located in northern Oregon. Pebble Springs Wind provides about 29,000 MWh of generation per year.

(Pebble Springs Wind, *Photo Source: BWP*)

Intermountain Power Project (Baseload)

As previously mentioned in Section 2.1.4, significant changes are occurring in the near future at the IPP coal-fired generating plant in Utah. In 2025, the existing 1,800 MW coal-fired power plant will be retired and replaced with 840 MW of natural gas-fired capacity.

Two years later, in 2027, BWP's existing contract with IPP will expire and a new contract will begin. BWP's decision to commit to the new IPP contract that starts in 2027 was based on several important considerations. First, renewal of the contract was necessary to secure rights on the Southern Transmission System (STS). The transmission rights on STS are important to BWP because they will provide important access to many renewable resources that are located east of Burbank. The ability to procure renewable energy from wind, solar, and geothermal power from that area is contingent on having the transmission capacity necessary to bring it back to BWP customers in Burbank. BWP's generation and transmission terms for the current and new IPP contracts are listed below in Table 2-7.

Table 2-7 IPP Contract Details

Item	Existing Contract (1987 – 2027)	Renewal Contract (2027 – 2077)
STS Capacity	2400 MW	2400 MW
BWP % Share of STS	4.49%	4.20%
BWP STS Share (MW)	107.95 MW	101.4 MW
BWP % Share of IPP Generation	4.17%	3.33%
BWP IPP Generation Share (MW)	89.28 MW coal (until June 2025), 35.028 MW natural gas (July 2025 to June 2027)	28 MW, starting June 16, 2027 (after the termination of the original Power Sales Contract for IPP coal)

The STS will be a critical tool used by BWP to achieve its renewable and clean energy goals in the future. Second, renewal of the IPP contract will also allow BWP to benefit from the prospect of a future conversion of the new natural gas-fired capacity at IPP to run on green hydrogen. The possible conversion of IPP to be fueled by hydrogen gas would represent an important opportunity

for BWP to secure a source of dispatchable zero-carbon energy in the future. That conversion would also provide valuable experience that could be used by BWP to evaluate the potential future conversion of the Magnolia and Lake One units to use hydrogen as well.

(Intermountain Power Project, *Photo Source: BWP*)

Don A. Campbell (Baseload)

In 2013, BWP entered into a 20-year contract for geothermal power from the Wild Rose Geothermal Project in Mineral County, Nevada. Wild Rose has since been renamed and is now known as the Don A. Campbell Geothermal Project. Burbank has rights to 15.4% of the facility's output which is nominally equal to about 2.49 MW.

(Don A. Campbell, *Photo Source: BWP*)

Ameresco Chiquita (Baseload)

In 2010, BWP began to receive almost 1.7 MW from the Ameresco Landfill Gas to Energy project pursuant to a long-term contract. This project produces energy by using landfill gas (methane) from the Chiquita Canyon Landfill, which is located approximately five miles west of Santa Clarita along State Highway 126.

This resource produces a consistent amount of energy throughout the day. Figure 2-4 below is a snapshot of the performance of Chiquita Canyon on September 8, 2022, during the heat dome event. This facility's stable production did not increase or decrease in response to changes in market prices.

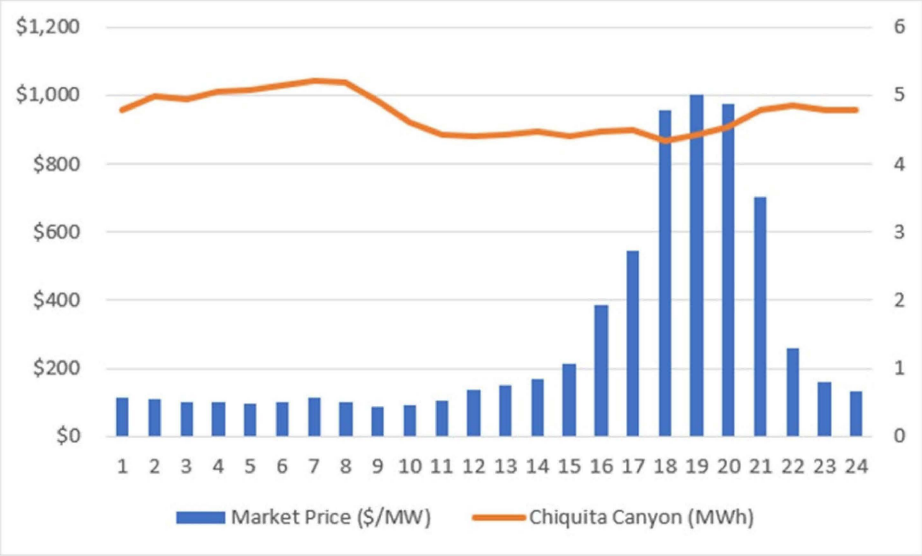


Figure 2-4 Ameresco Chiquita Production During Heat Dome Event

(Ameresco Chiquita, *Photo Source: BWP*)

Palo Verde (Baseload)

The Palo Verde Nuclear Generating Station provides Burbank with 9.5 MW of baseload capacity from its location west of Phoenix, Arizona. This is a carbon free resources that makes up approximately 8% of BWP's energy sources, annually.

(Palo Verde, *Photo Source: BWP*)

2.6 PLANNING SCENARIOS CONSIDERED

In each of the planning scenarios considered in this IRP, different sets of assumptions and/or modeling inputs were used to create potential "futures" under which Burbank would act to meet its energy needs. Once the desired changes to the base assumptions were specified by BWP for each planning scenario, Black & Veatch ran a series of simulations in the PLEXOS model to determine the portfolio of generating assets best suited to each set of assumptions. The Base Case discussion, brief summary overviews of each alternate planning scenario, their major assumptions, and the model results are discussed below.

These planning scenarios assume that certain new technologies enter the marketplace at the scales necessary to facilitate decarbonization goals. In the event that hydrogen fuel is not available under the assumed timeline or that hydrogen fuel costs are higher than expected, the results of these planning scenarios would be materially affected. Likewise, the availability of renewable energy at cost-competitive prices is also a key assumption.

A total of seven planning scenarios (including the Base Case) were run in the production cost model. A summary of each scenario is provided below. Each planning scenario and its results are discussed in greater detail staring in Section 2.6.1 below. Outside the scope of this IRP, BWP is also in the process of conducting additional studies on carbon capture and sequestration and hydrogen capabilities at MPP and Lake.

Table 2-8 Summary of Planning Scenarios

Scenario #	Scenario Name	Details
1	Base Case	Meets SB 100 requirements of 60% renewables by 2030 and the BWP requirement of 100% zero carbon by 2040.
2	Net Zero by 2030	Meets the Base Case requirements and 100% zero carbon by 2030 (accomplished by assuming renewable natural gas could be secured for Magnolia and Lake One in addition to assuming a full conversion of IPP to hydrogen by 2030).
3	SB1020+SMR	Meets the Base Case requirements, contracts for 25 MW of small modular reactor capacity by 2030 from outside CA, meets the SB 1020 goal of 90% carbon free resources by 2035 and 100% carbon free resources by 2040.
4	SB1020+SMR w/ 50% DEV & EV Demand	Meets the Base Case requirements, contracts for 25 MW of small modular reactor capacity by 2030 from outside CA, meets the SB 1020 goal of 90% carbon free resources by 2035 and 100% carbon free resources by 2040 and includes a 50% reduction of electrification (EV) and development (DEV) demand as compared to the Base Case.
5	10% Higher EV & DEV Demand	Meets the Base Case requirements and includes 10% higher electrification (EV) and development (DEV) demand as compared to the Base Case.
6	10% Lower EV & DEV Demand	Meets the Base Case requirements and includes 10% lower electrification (EV) and development (DEV) demand as compared to the Base Case.
7	New Transmission & PPAs	Meets the Base Case requirements and assumes working with LADWP to secure additional transmission services contracts to bring in renewables from outside CA.

2.6.1 Base Case

The Base Case is a least-cost portfolio based on the best available information regarding availability of technologies, future costs of renewable and non-renewable resources, energy storage, future cost of fuel, and the future capital costs at the time the analysis was conducted. The Base Case portfolio also complies with meeting all SB 100 state mandates and Burbank's aspirational goal of being 100% clean energy by 2040. The portfolio achieves 60% renewable energy by 2030 and 100% clean energy by 2040. Within this context, all non-fossil fuel technologies such as wind, solar, hydro, geothermal, hydrogen-fueled turbines, and nuclear are considered to be "clean energy." All of those technologies are also considered to be "renewable" except for large hydro facilities (e.g. Hoover Dam) and nuclear energy. SB 100 mandates 100% clean energy by 2045; however, BWP's goal is to accelerate this target by five years and be at 100% clean energy by 2040.